Technical Data Sheet

EVANTIC®

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VERTEC™ 5035

Compressor Grade PEEK

Product Description:

VERTEC™ 5035 is a proprietary lubricated PEEK (polyetheretherketone) material. This material is designed for wear rings, rider bands and piston rings in reciprocating compressors used in lubricated or non-lubricated conditions.

Physical Properties	ASTM Method	Typical Values
Specific Gravity, g/cm^3 (lb/ft^3)	D792	1.41 g/cm^3 (88 lb/ft^3)
Water Absorption 24 hrs @73.4° F (23°C)	D570	0.15%
Color	N/A	Black

Mechanical Properties	ASTM Method	Typical Values
Tensile Strength	D1708	11000 psi
Tensile Elongation	D1708	3.6 %
Flexural Strength	D790	21,000 psi (144.7 MPa)
Flexural Modulus	D790	800,000 psi (5,515.8 MPa)
Compressive Strength	D695	18,100 psi (124.8 MPa)
Compressive Modulus	D695	500,000 psi (3,447.3 MPa)
Impact Strength (Izod, notched)	D256	0.8 ft-lb/in
Hardness	Shore D	86

Tribological Properties	ASTM Method	Typical Values
Coefficient of Friction - Static	D3702	0.35
Coefficient of Friction - Dynamic	D3702	0.29
Wear Rate PV: 20,000 psi·fpm (137.9 MPa·m/s)	D3702	5.5 µin/min

Characteristics:

- High strength
- High temperature resistance
- Excellent wear resistance
- Excellent chemical resistance
- Low smoke and toxic gas emission
- Superior electrical insulating properties

Typical Applications:

- Centrifugal pump components
  - Impeller and case wear bearings
  - Throat and throttle bearings
  - Inter-stage sleeve bearings
- Jet engine components
- Electrical multi-pin connectors
- Silicon wafer carriers
- Compressor piston and rider rings
- High-temperature valve seats
- Surgical devices
- Down-hole seals and backup rings
- Compressor valve plates
- Food preparation equipment components

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Thermal Properties	ASTM Method	Typical Values
Coefficient of Linear Thermal Expansion (78-300°F / 25.6-204.4°C)	D696	37 x 10 -6/° F
Heat Deflection Temperature (@264 psi / 1.82 MPa)	D648	530°F (276.6°C)
Glass Transition Temperature (Tg)	D3418	289°F (142.7°C)
Continuous Service Temperature (Max @ no load)		480°F (248.9°C)
Melting Point		644°F (340°C)

Electrical Properties	ASTM Method	Typical Values
Volume Resistivity	D257	10^{10} Ω-cm
Dielectric Strength	D149	
Dielectric Constant	D150	

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